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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/885,231

06/19/2001

Michael O'Connor

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4421

21906

7590

08/02/2002

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EXAMINER

ESPLIN, DAVID B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 08/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/885,231

Applicant(s)

O'CONNOR ET AL.

Examiner

D. Ben Esplin

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33, 48-51 and 55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19, 29-33, 48-51 and 55 is/are allowed.
- 6) ☒ Claim(s) 20-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,309,071 to Huang et al. as applied to claims 1-3, 7, 29-34, 40, 41, and 46-48 above, and further in view of U.S. Patent No. 6,144,420 to Jung.

FIG. 2 of the patent to Huang clearly shows a liquid crystal projection display system with the color wheel 114 allowing one color to pass continuously, while switching back and forth between the other two (col. 4 lines 12-17). The light is then separated by the polarizing beam splitter 122 into an s-polarization component and a p-polarization component which are then incident on the polarizing beam splitters 128 and 146 (col. 4 lines 36-39). The light is then modulated by two sets of liquid crystal modulators 130, 132 and 148, 150 for modulating the light. The polarizing beam splitter 138 then recombines the modulated light and the projecting lens 140 projects the image contained in the recombined light beam.

The patent to Huang fails to show a color switching means disposed after the separating polarizing beam splitter 122 in the optical path. Instead the color switching is done prior to separation by the color wheel 114 (see FIG. 2). However, the patent to Jung, in FIG. 2, clearly show the color wheel 173 being disposed after a separating

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polarizing beam splitter 130, in a reflection projector type apparatus that separately modulates the s and p components of a light beam. Therefore, it would have been obvious to one skilled in the art to provide color switching means in a system, like the one disclosed by Huang, in the optical light paths leaving the separation polarizing beam splitter, as is shown by Jung to be well known, as an art recognized alternative to the color switching means of Huang located before the separation polarizing beam splitter.

Regarding claims 26-28, the patent to Huang is silent concerning the use of a three color switching means. But the color wheel 170 found in FIG. 2 of Jung is a three color switch. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to replace the two color switch of Huang with the three color switch of Jung as an art recognized equivalent.

### ***Response to Arguments***

Applicant's arguments filed July 5, 2002, regarding claims 20-28, have been fully considered but they are not persuasive.

While Huang does fail to show a means for switching within the first and second means for inserting content, it does provide a different means for accomplishing this function. Namely, passing the light through a switching means prior to splitting it by polarization. Jung shows that splitting light by polarization before switching at least one of the resulting light beams in order to obtain a multicolor image was well known in the art (see FIG. 2). The motivation for switching the light in the system of Huang after polarization separation instead of before is that doing so is a well known, art recognized alternative to switching the light prior to polarization separation.

*Allowable Subject Matter*

Claims 1-19, 29-33, 51, and 55 are allowed.

The following is an examiner's statement of reasons for allowance:

Referring to claims 1-19, the element of two light engine kernels patterning light in two separate color spaces is not found in the prior art.

Regarding claims 29-33, the generating of two separate images with the two light engine kernels that receive light from a polarization separation means for creating a 3-D image is not suggested in the prior art.

Concerning claims 48-50, the tiling of the images provided by the two separate light kernels, patterning light from the same source and separated by a polarization separation means is not shown or taught in the prior art.

Further referring to claims 51 and 55, the inclusion in each of the light engine kernels of a switching means, a single modulation means and a polarization beam splitting means together with a light polarization means and a light recombination means within a projection apparatus is not found in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,575,548 to Lee discloses a full color three dimensional projector.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DBE  
DBE  
July 26, 2002

  
RUSSELL ADAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800